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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/732,282	12/07/2000	John Michael Miller	200-0459	9416

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EXAMINER

CORRIGAN, JAIME W

ART UNIT	PAPER NUMBER
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3748

DATE MAILED: 02/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/732,282

Applicant(s)

MILLER, JOHN MICHAEL

Examiner

Jaime W Corrigan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 02 December 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 11-14, 24-26 and 35-44 is/are pending in the application.

4a) Of the above claim(s) 11 is/are withdrawn from consideration.

- 5) ☒ Claim(s) 13, 24-26, 35 and 36 is/are allowed.

- 6) ☒ Claim(s) 1, 14, 37-41 and 44 is/are rejected.

- 7) ☒ Claim(s) 2-8, 12, 42 and 43 is/are objected to.

- 8) ☐ Claim(s) are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. .
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s).
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 14 6) ☐ Other:

DETAILED ACTION

This Office Action is in response to the Amendment filed on 12-02-02. Claims 1, 36 have been amended. Claims 9-10, 15-16, 22-23 have been cancelled. Claims 19-21 are Non-elected. Overall, claims 1-8, 12-14, 24-26, 35-44 are pending in this application. The arguments contained therein were deemed persuasive in part. Accordingly, a new non-final rejection is set forth below.

The Examiner would like to point out that claim 11 will not be examined on its merits since it depends on cancelled claim 10.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 14, 41 are rejected under 35 U.S.C. 102(b) as being anticipated by Hirt (PN 4,256,065).

Regarding claims 14, 41 Hirt discloses a rotary electric actuator (See Abstract, Column 2 Lines 59-61) having a rotatable ballnut (See Figure 1 (16), Column 2 Lines 55-60); and, a valve having a valve stem (See Figure 1 (11)) and a valve head (See Column 2 Lines 37-41), said valve stem operatively connected to said ballnut (See

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Figure 1 (11), (13), (16), Column 2 Lines 64-68, Column 3 Lines 1-2), said valve stem configured to move generally axially (See Column 2 Lines 64-68, Column 3 Lines 1-2) responsive to the rotation of said ballnut to selectively engage and disengage said valve head with a valve seat (See Column 2 Lines 37-41) on a cylinder head (See Figure 1 (10), Column 2 Lines 37-41) of said engine (See Column 1 Lines 17-20, Column 2 Lines 8-15).

Claim 44 is rejected under 35 U.S.C. 102(b) as being anticipated by Kamimaru (PN 5,782,211).

Regarding claim 44 Kamimaru discloses controlling movement of a valve member (See Figure 7 (7a)) based on an electrical control signal (See Figure 7 (8a) (9a), Abstract);

generating a position signal (See Column 3 Lines 23-33) indicative of a position of said valve member; and,

commanding said valve member to stop (See Figure 8 (c)) when said position signal indicates said valve member is proximate (See Column 1 Lines 47-51, Column 2 Lines 1-6) a valve seat of an engine cylinder.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 37-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gerling (PN 5,931,142).

Regarding claim 1 Gerling discloses an electromechanical valve assembly (See Figure 1) for an internal combustion engine (See Column 9 Lines 48-66), said engine having an engine cylinder (See Figure 1 (2a), (2b)), said assembly comprising:

a rotor (See Figure 1 (7)) centered about a first axis having a bore (See Figure 2 (7)) extending generally axially therethrough;

a stator (See Figure 1 (13)) operatively disposed about said rotor for producing a torque (See Column 1 Lines 44-65, Column 7 Lines 60-64) to cause rotation of said rotor (See Abstract) about said first axis;

a valve (See Figure 1 (1)) having a valve stem (See Figure 1 (5)) and a valve head, said valve stem configured to move upwardly (See Column 1 Lines 5-11) when said rotor rotates in a first direction to move said valve head against a valve seat (See Figure 1, Column 6 Lines 12-26) in said engine to prevent gas flow into or out of said engine cylinder; and,

an anti-twist guide (See Abstract Lines 1-7) for preventing said valve stem from rotating about said first axis.

Regarding claim 37 Gerling discloses an electromechanical valve assembly (See Figure 1) for an internal combustion engine (See Column 9 Lines 48-66), said engine having an engine cylinder (See Figure 1 (2a), (2b)), said assembly comprising:

a rotor (See Figure 1 (7)) centered about a first axis having a bore (See Figure 2 (7)) extending generally axially therethrough;

a stator (See Figure 1 (13)) operatively disposed about said rotor for producing a torque (See Column 1 Lines 44-65, Column 7 Lines 60-64) to cause rotation of said rotor (See Abstract) about said first axis;

a valve (See Figure 1 (1)) having a valve stem (See Figure 1 (5)) and a valve head, said valve stem configured to move upwardly (See Column 1 Lines 5-11) when said rotor rotates in a first direction to move said valve head against a valve seat (See Figure 1, Column 6 Lines 12-26) in said engine to prevent gas flow into or out of said engine cylinder; and,

a position sensor (See Column 8 Lines 27-28) for determining a rotational position (See Column 8 Lines 28-31) of said rotor.

Regarding claim 38 Gerling discloses a rotor centered about an axis (See Figure 1 (7)); a stator (See Figure 1 (13), (14)) disposed around said rotor producing a torque (See Column 1 Lines 44-65, Column 7 Lines 60-64) to cause rotation of said rotor about said axis; and,

a valve member (See Figure 1 (5), Column 6 Lines 28-51) threadably engaging said rotor, said member moving towards a valve seat (See Column 6 Lines 21-27) of an engine cylinder (See Figure 1 (2a)) when said rotor rotates in a first direction to restrict flow into or out of said cylinder (See Abstract Lines 1-7).

Regarding claim 39 Gerling discloses a position sensor (See Column 8 Lines 27-28) generating a signal indicative of a rotational position of said rotor (See Column 8 Lines 28-31).

Regarding claim 40 Gerling discloses a position sensor generating a signal indicative of an axial position (See Column 2 Lines 48-67, Column 3 Lines 1-61) of said valve member.

Note: Although Gerling doesn't explicitly disclose a valve to prevent gas flow into or out of said engine cylinder, it would have been obvious to one having ordinary skill in the art since use of the valve in an internal combustion engine is suggested in the reference.

Response to Arguments

Applicant's arguments with respect to claims 1-2, 4, 13-14, 26, 36 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

Claims 2-8, 12, 42-43 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 13, 24-26, 35-36 are allowed.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Matsumoto et al. (PN 5,671,705), Ushirono et al. (PN 5,669,341) disclose similar valve control systems.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jaime W Corrigan whose telephone number is (703) 308-2639. The examiner can normally be reached on M-F 8:30- 6 2nd Friday off.

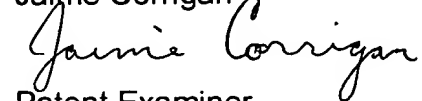
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E Denion can be reached on (703) 308-2623. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7763 for regular communications and (703) 308-7763 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0975.

JC

February 10, 2003

Jaime Corrigan



Patent Examiner

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